| FORM PTO-1449 | U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE | ATTY. DOCKET NO. ENT/5 | APPLN. NO. 10/729,542 |
|---|---|---|------------------------------|
| O 1 P E INFORMATION DISCLOSURE STATEMENT BY APPLICANT | | APPLICANT Nicholas J. Archer and Anita H. Lewin | CONFIRMATION NO. 1916 |
| JUN 1 8 2004 (\$) | • | FILING DATE December 5, 2003 | GROUP 1625 |

| U.S. PATENT DOCUMENTS | | | | | | |
|-----------------------|--------------------|----------|-------------------|-------|----------|---------------------------------------|
| EXAMINER INITIAL | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
| SA | 2,893,996 | 07/07/59 | Rudner and Prapas | 260 | 292 | · · · · · · · · · · · · · · · · · · · |
| 1 | 2,948,730 | 08/09/60 | Rudner and Prapas | 260 | 292 | · |
| | 4,469,700 | 09/04/84 | Somers | 424 | 265 | |
| | 4,512,996 | 04/23/85 | Somers | 514 | 304 | |
| | 4,556,663 | 12/03/85 | Somers | 514 | 304 | |
| | 5,376,667 | 12/27/94 | Somers et al. | 514 | 304 | |
| | 5,525,613 | 06/11/96 | Wynn et al. | 514 | 304 | |
| | 5,559,123 | 09/24/96 | Somers et al. | 514 | 304 | |
| | 5,663,345 | 09/02/97 | Somers et al. | 546 | 127 | |
| | 5,763,456 | 06/09/98 | Wynn et al. | 514 | 304 | |
| 5/4 | 6,077,848 | 06/20/00 | Wynn et al. | 514 | 304 | |

FOREIGN PATENT DOCUMENTS

| EXAMINER | DOCUMENT | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION | |
|----------|----------|------|---------|-------|--------------|-------------|----|
| NITIAL | NUMBER | VAIE | COUNTRY | CLASS | 199 SUBCEMSS | YES | NO |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

| EXAMINER INITIAL | |
|------------------|---|
| SA | W.H. Anderson and D.T. Stafford, "Applications of Capillary Gas Chromatography in Routine Toxicological Analyses," <i>J. High Resolut. Chromatogr., Chromatogr. Commun.</i> , 6, pp. 247-254 (1983) |
| 8H | E.J. Ariëns and A.M. Simonis, "A Molecular Basis for Drug Action. The Interaction of One or More Drugs with Different Receptors," <i>J. Pharm. Pharmacol.</i> , 16, pp. 289-312 (1964) |

EXAMINER

Huang

DATE CONSIDERED

4/2/05

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

| FORM PTO-1449 | U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE | ATTY. DOCKET NO. ENT/5 | APPLN. NO. 10/729,542 |
|---------------|---|---|--------------------------|
| 1 | IFORMATION DISCLOSURE TATEMENT BY APPLICANT | APPLICANT Nicholas J. Archer and Anita H. Lewin | CONFIRMATION NO. 1916 |
| | · | FILING DATE December 5, 2003 | GROUP 1625 |

| SH | M.R. Bell and S. Archer, "L(+)-2-Tropinone," J. Amer. Chem. Soc., 82, pp. 4642-4644 (1960) |
|----------|---|
| | R. Bingham, "Esterene in the Treatment of Rheumatoid Arthritis," Arthritis News Today, 2(7), pp. 1-4 (1980) |
| | C.S. Boyer and D.R. Petersen, "Enzymatic Basis for the Transesterification of Cocaine in the Presence of Ethanol: Evidence for the Participation of Microsomal Carboxylesterases," <i>J. Pharmacol. Exp. Ther.</i> , 260(3), pp. 939-946 (1992) |
| | M.R. Brzezinski et al., "Convenient Synthesis of Benzoylecgonine Ethyl Ester, a Homolog of Cocaine," Synth. Commun., 22(7), pp. 1027-1032 (1992) |
| | R.D. Budd, "Cocaine Radioimmunoassay - Structure Versus Reactivity," Clin. Toxicol., 18(7), pp. 773-782 (1981) |
| | H. Bundgaard, "Design of Prodrugs: Bioreversible Derivatives for Various Functional Groups and Chemical Entities," <i>Design of Prodrugs</i> , Elsevier, Amsterdam, pp. 1-2 (1985) |
| | G. Calmels and E. Gossin, "De la Constitution Chimique de la Cocaine," CR Hebd Seances Acad Sci., 100, pp. 1143-1146 (1885) |
| | D.T. Chia and J.A. Gere, "Rapid Drug Screening Using Toxi-Lab® Extraction Followed by Capillary Gas Chromatography/Mass Spectroscopy", Clin. Biochem., 20, pp. 303-306 (1987) |
| | A.J. Clark, "The Antagonism of Acetyl Choline by Atropine," J. Physiol., 61, pp. 547-556 (1926) |
| | T. Cohen et al., "The Direction of Opening of Styrene Oxide by Acetic Acid," J. Org. Chem., 27, p. 814-819 (1962) |
| | E.J. Cone et al., "Testing Human Hair for Drug of Abuse. II. Identification of Unique Cocaine Metabolites in Hair of Drug Abusers and Evaluation of Decontamination Procedures," <i>J. Anal. Toxicol.</i> , 15, pp. 250-255 (1991) |
| | C. Csongar et al., "Synthesis of Bis-Tetrazoles with 2-Phenyl-2H-Tetrazol-5-Carboxylic Acid Chloride," J. f. prakt. Chemie., 329(6), pp. 1111-1115 (1987) |
| | R.A. Dean et al., "Human Liver Cocaine Esterases: Ethanol-Mediated Formation of Ethylcocaine," FASEB J., 5, pp. 2735-2739 (1991) |
| | A. Einhorn and A. Marquardt, "Ueber Rechtscocain," Chem. Ber., 23, p. 468-474 (1890) |
| | F. Fish and W.D.C. Wilson, "Excretion of Cocaine and its Metabolites in Man," J. Pharm. Pharmac., 21 Suppl., pp. 135S-138S (1969) |
| | J.R. Fozard et al., "Structure-Activity Relationship of Compounds which Block Receptors for 5-Hydroxytryptamine on the Sympathetic Nerves of the Rabbit Heart," <i>Br. J. Pharmacol.</i> , 61(3), pp. 499P-500P (1977) |
| AN. | J.R. Fozard et al., "Blockade of Serotonin Receptors on Autonomic Neurones by (-)-Cocaine and Some Related Compounds," Eur. J. Pharmacol., 59, pp. 195-210 (1979) |
| <u> </u> | · |

EXAMINER -

& Huang

DATE CONSIDERED

5/2/05

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

| | U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE | ATTY. DOCKET NO. ENT/5 | APPLN. NO. 10/729,542 |
|--|---|---|------------------------------|
| | INFORMATION DISCLOSURE STATEMENT BY APPLICANT | APPLICANT Nicholas J. Archer and Anita H. Lewin | CONFIRMATION NO. 1916 |
| | | FILING DATE December 5, 2003 | GROUP 1625 |

| 800 | J.H. Gaddum, "The Action of Adrenalin and Ergotamine on the Uterus of the Rabbit," J. Physiol., 61, pp. 141-150 (1926) |
|-----|---|
| 1 | J.H. Gaddum, "The Quantitative Effects of Antagonistic Drugs," J. Physiol., 89, pp. 7P-9P (1937) |
| · | J.M.G. Galvez and A.P. de Abram, "Cocaina: Avances en su Investigacion," Bol. Soc. Quim. Peru, 56, pp. 12-20 (1989) |
| | C. Hansch and W.J. Dunn, III, "Linear Relationships Between Lipophilic Character and Biological Activity of Drugs," J. Pharm. Sci., 61, pp. 1-19 (1972) |
| | W.L. Hearn et al., "Cocaethylene is More Potent than Cocaine in Mediating Lethality," <i>Pharmacol. Biochem. Behav.</i> , 39(2), pp. 531-533 (1991) |
| | W.L. Heam et al., "Cocaethylene: A Unique Cocaine Metabolite Displays High Affinity for the Dopamine Transporter," J. Neurochem., 56(2), pp. 698-701 (1991) |
| | G.W. Hime et al., "Analysis of Cocaine and Cocaethylene in Blood and Tissues by GC-NPD and GC-lon Trap Mass Spectrometry," <i>J. Anal. Toxicol.</i> , 15, pp. 241-245 (1991) |
| | P. Jatlow et al., "Cocaethylene: A Neuropharmacologically Active Metabolite Associated with Concurrent Cocaine- Ethanol Ingestion," <i>Life Sci.</i> , 48(18), pp. 1787-1794 (1991) |
| | J.L. Katz et al., "Comparative Behavioral Pharmacology and Toxicology of Cocaine and its Ethanol-Derived Metabolite, Cocaine Ethyl-Ester (Cocaethylene)," <i>Life Sci.</i> , 50(18), pp. 1351-1361 (1992) |
| | A. Leo et al., "Partition Coefficients and Their Uses," Chemical Reviews, 71, pp. 525-616 (1971) |
| | A.H. Lewin et al., "2β-Substituted Analogues of Cocaine. Synthesis and Inhibition of Binding to the Cocaine Receptor," <i>J. Med. Chem.</i> , 35(1), pp. 135-140 (1992) |
| | T. Lukaszewski and W.K. Jeffery, "Impurities and Artifacts of Illicit Cocaine," <i>J. Forensic Sci.</i> , 25(3), pp. 499-507 (1980) |
| | J. March, Advanced Organic Chemistry, Second Edition, McGraw-Hill Book Company, New York, p. 363 (1977) |
| | H.H. McCurdy, "Quantitation of Cocaine and Benzoylecognine after JETUBE® Extraction and Derivitization," J. Anal. Toxicol., 4, pp. 82-85 (1980) |
| | Medical World News, "FP Giving Cocaine for Arthritis is Beset but Gains a Major Ally," pp. 19-20 (1979) |
| SH | A.L. Misra et al., "Physiologic Disposition and Metabolism of [³ H]Ecgonine (Cocaine Metabolite) in the Rat," Res. Commun. Chem. Pethol. Pharmacol., 8(1), pp. 55-63 (1974) |

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

| FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE | ATTY. DOCKET NO. ENT/5 | APPLN. NO. 10/729,542 |
|--|---|--------------------------|
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT | APPLICANT Nicholas J. Archer and Anita H. Lewin | CONFIRMATION NO. 1916 |
| | FILING DATE December 5, 2003 | GROUP 1625 |

| 818 | A.L. Misra and S.J. Mule, "Calcium-Binding Property of Cocaine and Some of its Active Metabolites-Formation of Molecular Complexes," Res. Comm. Chem. Pathol. Pharmacol., 11(4), pp. 663-666 (1975) |
|-----|--|
| | A.L. Misra et al., "Disposition of [³ H]Benzoylnorecgonine (Cocaine Metabolite) in the Rat," Res. Commun. Chem. Pathol. Pharmacol., 13(4), pp. 579-584 (1976) |
| | A.L. Misra et al., "Estimation and Disposition of [3H]Benzoylecgonine and Pharmacological Activity of Some Cocaine Metabolites," <i>J. Pharm. Pharmac.</i> , 27, pp. 784-786 (1975) |
| | C. Moore et al., "Determination of Cocaine and its Metabolites in Brain Tissue Using High-Flow Solid-Phase Extraction Columns and High-Performance Liquid Chromatography," Forensic Sci. Intl., 53(2), pp. 215-219 (1992) |
| · | S.J. Mule et al., "Intracellular Disposition of [³ H]-Cocaine, [³ H]-Norcocaine, [³ H]-Benzoylecgonine and [³ H]-Benzoylnorecgonine in the Brain of Rats," <i>Life Sci.</i> , 19, pp. 1585-1596 (1976) |
| | A. Pautard-Cooper and S.A. Evans, Jr., "Mechanistic Implications of 1,3,2λ ⁵ -Dioxaphospholanes in the Mitsunobu Reaction," J. Org. Chem., 54, pp. 2485-2488 (1989) |
| | M. Perez-Reyes and A.R. Jeffcoat, "Ethanol/Cocaine Interaction: Cocaine and Cocaethylene Plasma Concentrations and Their Relationship to Subjective and Cardiovascular Effects," <i>Life Sci.</i> , 51(8), pp. 553-563 (1992) |
| | M. Polášek and B. Gaš., "Determination of Limiting Ionic Mobilities and Dissociation Constants of Some Local Anaesthetics," <i>J. Chromatogr.</i> , 596, pp. 265-270 (1992) |
| | R.H. Prager and Z. Yurui, "Preparation of Carboxylate Esters of Polyhydric Alcohols by Using a Sulfonated Charcoal Catalyst," <i>Aust. J. Chem.</i> , 42(6), pp. 1003-1005 (1989) |
| | F.K. Rafla and R.L. Epstein, "Identification of Cocaine and its Metabolites in Human Urine in the Presence of Ethyl Alcohol," <i>J. Anal. Toxicol.</i> , 3, pp. 59-63 (1979) |
| | M.E.A. Reith et al., "Locomotor Effects of Cocaine, Cocaine Congeners, and Local Anesthetics in Mice," Pharmacol. Biochem. Behav., 23, pp. 831-836 (1985) |
| | M.E.A. Reith et al., "Structural Requirements for Cocaine Congeners to Interact with [³ H]Bactachotoxinin a 20-α-Benzoate Binding Sites on Sodium Channels in Mouse Brain Synaptosomes," <i>J. Biol. Chem.</i> , 261(16), pp. 7300-7305 (1986) |
| | M.E.A. Reith et al., "Structural Requirements for Cocaine Congeners to Interact with Dopamine and Serotonin Uptake Sites in Mouse Brain and to Induce Stereotyped Behavior," <i>Biochem. Pharmacol.</i> , 35(7), pp. 1123-1129 (1986) |
| 34 | S.M. Roberts et al., "Cocaethylene Hepatotoxicity in Mice," Biochem. Pharmacol., 43(9), pp. 1989-1995 (1992) |

EXAMINER

2. Having

DATE CONSIDERED For

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

| FORM PTO-1449 | U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE | ATTY. DOCKET NO. ENT/5 | APPLN. NO. 10/729,542 |
|---------------|---|---|--------------------------|
| 1 | INFORMATION DISCLOSURE STATEMENT BY APPLICANT | APPLICANT Nicholas J. Archer and Anita H. Lewin | CONFIRMATION NO. 1916 |
| | | FILING DATE December 5, 2003 | GROUP 1625 |

| SH | S.M. Roberts et al., "An Assay for Cocaethylene and Other Cocaine Metabolites in Liver Using High-Performance Liquid Chromatography," <i>Anal. Biochem.</i> , 202, pp. 256-261 (1992) |
|-----|--|
| | R.H. Rohrbaugh and P.C. Jurs, "Prediction of Gas Chromatographic Retention Indexes for Diverse Drug Compounds," <i>Anal. Chem.</i> , 60(20), pp. 2249-2253 (1988) |
| | HL. Schmidt and G. Werner, "Synthetischer Einbau von ¹⁴ C in (-)-Cocain, (-)-Ekgonin und Derivate," <i>Ann.</i> , 653, pp. 184-194 (1962) |
| | R.M. Smith, "Ethyl Esters of Arylhydroxy- and Arylhydroxymethoxycocaines in the Urines of Simultaneous Cocaine and Ethanol Users," <i>J. Anal. Toxicol.</i> , 8(1), pp. 38-42 (1984) |
| | R.P. Stephenson, "A Modification of Receptor Theory," Br. J. Pharmacol., 11, pp. 379-393 (1956) |
| | D.L. von Minden and N.A. D'Amato, "Simultaneous Determination of Cocaine and Benzoylecgonine in Urine by Gas-Liquid Chromatography," <i>Anal. Chem.</i> , 49(13), pp. 1974-1977 (1977) |
| | G. Werner and KH. Störr, "Labelled Tropane Alkaloids. VI. Syntheses of [N-methyl-T ₁]Psicain-neu and of Polytopically Tritiated Psicain," <i>Liebigs Ann. Chem.</i> , pp. 1650-1654 (1974) |
| | J.J. Woodward et al., "Cocaethylene Inhibits Dopamine Uptake and Produces Cocaine-Like Actions in Drug Discrimination Studies," <i>Eur. J. Pharmacol.</i> , 197, pp. 235-236 (1991) |
| Sty | I. Zimányi et al., "Effect of Cocaine and Cocaine Congeners on Veratridine-Induced Depolarization in Mouse Cerebrocortical Synaptoneurosomes," <i>J. Neurosci. Res.</i> , 22, pp. 201-208 (1989) |
| | |
| | |
| | |
| | |

EXAMINER & theavy

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.